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QUALITATIVE ELIMINATION FROM HIGH SCHOOLS

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How do pupils who leave the high schools before completing the course compare in class standing with those who continue until graduation? In other words, is there a distinct qualitative difference between the pupils whom the high schools graduate and those whom they eliminate?

Dr. W. F. Dearborn found upon investigating the facts in two cities in Wisconsin¹ that the high-school graduates were not a highly selected group of students, but rather of average ability. But it is a well-known fact that popular opinion holds usually the opposite view.

Four other questions, analytical phases of the main problem, present themselves for consideration: (1) Does the quality of elimination vary in the different years of the high-school course? (2) Does one subject in the curriculum more than another influence elimination? (3) Is the elimination of boys from the high school qualitatively different from the elimination of girls? (4) Do the same qualitative tendencies appear in the high schools of different cities?

In approaching this problem we may assume that the grades given to a pupil by his teachers constitute a measure of that pupil's ability to do the work which the school prescribes. This assumption gives us the basis for qualitative comparisons. Accordingly I have taken the recorded annual grades in English, mathematics, history, and foreign languages of nearly five thou-

¹ See *Elementary School Teacher*, September, 1909. Dr. Dearborn found in the schools which he investigated (1) that fully a third of the pupils who reached the high school had been inferior pupils in the grades; (2) that fully a third of the pupils who dropped out of the high school had ranked in the upper half of their classes in the high school; (3) but that scholarship had a very definite relation to elimination from the university; (4) and that the subject of English influenced elimination more than mathematics did.

sand pupils who entered high school in September, 1905. The total number of such grades used in this study is 18,926.

There were twelve Chicago high schools included in this study: the Austin, Calumet, Englewood, Hyde Park, Jefferson, Lake, McKinley, Marshall, Medill, South Chicago, Tuley, and Waller. In addition to these I have similar statistics from the Central High School of Kansas City, Missouri, and from the three smaller high schools in Boonville, Missouri, Bloomington, Indiana, and Hartford City, Indiana.² The data for the Chicago schools are given in Tables I and II, and for the other schools in Table III.

For convenience all grades are distributed into five groups, designated as I, II, III, IV, and V, beginning with the highest. This means that in Chicago, for example, all grades of 90 or above fall into group I; 85 to 89 inclusive, group II; 80 to 84 inclusive, group III; 75 to 79 inclusive, group IV; and all grades below 75, which is the minimum passing mark in Chicago schools, constitute group V.

The grades of the graduates are taken for each of the four years separately. The graduates are compared, according to their work each year, with those of their classmates eliminated during or at the close of that year or too early in the succeeding year to leave a recorded grade. Pupils who left by transfer to some other school, if the fact was so recorded, are not counted in either class. For the three small high schools and for the Kansas City high school the numbers of the graduates and of the persons eliminated each year are tabulated according to their standing in each subject during each of the four years, the figures for boys and for girls being presented separately (Table III). For the twelve Chicago high schools, where many more pupils are involved and the percentages consequently more significant, the distribution of the graduates and the persons eliminated each year is given for boys and girls separately and also for both combined, and in addition the percentage of elimination is given in each case (Table I). The basis of this percentage,

² For the data outside of Chicago I am indebted to the generous co-operation of Superintendents J. M. Greenwood, M. A. O'Rear, H. L. Smith, and W. A. Myers.

TABLE I

SHOWING, FOR TWELVE CHICAGO HIGH SCHOOLS, THE DISTRIBUTION OF THE PUPILS WHO ENTERED IN SEPTEMBER, 1905, AND WERE GRADUATED IN JUNE, 1909, AND OF THEIR CLASSMATES WHO WERE ELIMINATED EACH YEAR, ACCORDING TO THE GRADES OF THAT YEAR'S WORK: WITH THE PERCENTAGE OF ELIMINATION, COMPUTED ON THE BASIS OF THE NUMBER ELIMINATED IN THE YEAR IN QUESTION TOGETHER WITH THE NUMBER GRADUATED IN JUNE, 1909

	FIRST YEAR										SECOND YEAR										THIRD YEAR										FOURTH YEAR														
	Boys					Girls					Total					Boys					Girls					Total					Boys					Girls					Total				
	Eliminated			Percentage of Elimination	Eliminated			Percentage of Elimination	Eliminated			Percentage of Elimination	Eliminated			Percentage of Elimination	Eliminated			Percentage of Elimination	Eliminated			Percentage of Elimination	Eliminated			Percentage of Elimination	Eliminated			Percentage of Elimination	Eliminated			Percentage of Elimination									
	Graduated	Eliminated	Percentage of Elimination		Graduated	Eliminated	Percentage of Elimination		Graduated	Eliminated	Percentage of Elimination		Graduated	Eliminated	Percentage of Elimination		Graduated	Eliminated	Percentage of Elimination		Graduated	Eliminated	Percentage of Elimination		Graduated	Eliminated	Percentage of Elimination		Graduated	Eliminated	Percentage of Elimination		Graduated	Eliminated	Percentage of Elimination		Graduated	Eliminated	Percentage of Elimination	Graduated	Eliminated	Percentage of Elimination			
English	45	11	20	122	59	33	107	70	30	44	5	10	94	21	18	138	26	16	31	4	11	59	3	3	90	7	7	39	0	82	4	5	121	4	3										
I.....	61	34	36	141	114	45	202	148	42	54	9	14	128	48	27	182	57	24	70	10	12	137	15	10	207	25	11	45	1	2	113	5	4	158	6	4									
II.....	82	72	47	103	193	65	185	265	59	73	25	26	141	95	40	214	120	36	82	13	13	155	28	15	237	41	15	85	11	11	157	20	11	242	31	11									
III.....	56	150	73	65	241	79	121	391	76	79	56	41	99	117	54	178	173	49	80	35	30	118	57	33	198	92	32	88	20	19	131	28	18	219	48	18									
IV.....	3	121	98	3	136	98	6	257	98	2	42	95	5	69	93	7	111	94	3	26	90	9	22	71	12	48	80	2	16	89	0	17	100	2	33	94									
V.....	247	388	61	434	743	63	681	1,131	62	252	137	35	467	350	437	719	487	40	266	88	25	478	125	21	744	213	22	259	48	16	483	74	13	742	122	14									
Total...																																													
Mathematics																																													
I.....	84	24	22	129	69	35	213	93	30	63	4	6	72	17	19	135	21	13	39	6	13	21	0	0	60	6	9	42	1	2	16	2	11	58	3	5									
II.....	59	45	43	106	88	45	105	33	45	56	10	15	66	31	32	122	41	20	30	2	6	16	1	6	46	3	6	25	5	17	14	0	0	39	5	11									
III.....	44	54	55	93	127	60	137	181	57	48	19	28	73	38	34	121	57	32	38	7	15	22	2	8	60	9	13	25	1	4	15	1	8	40	2	5									
IV.....	59	115	70	97	179	65	147	204	67	61	32	34	99	49	33	160	81	34	44	14	24	30	9	23	74	23	24	32	5	4	20	6	23	52	11	17									
V.....	5	134	96	6	200	97	11	334	97	9	32	78	20	57	74	29	89	75	0	8	57	11	7	40	17	15	47	6	8	57	4	5	55	10	13	57									
Total...	242	372	61	431	663	61	673	1,035	61	237	97	29	330	192	37	567	289	34	157	37	19	100	19	16	257	56	18	130	20	13	69	14	17	199	34	15									

Foreign Language	57	14	20	140	53	27	197	67	25	44	4	8	112	30	21	156	34	18	49	2	4	08	7	7	147	9	6	32	2	6	85	1	1	117	3	2	
	I.....	62	31	33	108	99	49	170	130	43	53	8	13	102	36	26	155	44	22	30	3	9	86	12	12	116	15	11	28	4	13	76	3	4	104	7	6
	II.....	54	44	46	83	127	60	137	171	56	64	26	29	110	66	37	174	92	35	62	16	21	106	26	20	168	42	20	49	3	6	102	3	3	151	6	4
	III.....	50	102	67	87	174	67	137	276	67	70	27	28	112	81	42	182	108	37	66	22	25	112	25	20	178	47	21	58	10	15	65	13	16	123	23	16
	IV.....	51	145	92	14	159	92	25	304	92	12	37	76	14	75	84	26	112	81	11	21	60	10	22	70	21	43	67	0	6	100	4	14	78	4	20	
	V.....	11	145	92	14	159	92	25	304	92	12	37	76	14	75	84	26	112	81	11	21	60	10	22	70	21	43	67	0	6	100	4	14	78	4	20	
Total....	234	336	59	432	612	59	666	948	59	243	102	304	450	288	39	693	390	36	218	64	23	412	92	18	630	156	20	167	25	13	332	34	9	499	59	11	
History	I.....	...	...	...	...	...	...	...	...	28	5	15	59	7	11	87	12	12	35	1	3	59	4	6	94	5	5	38	4	10	58	2	3	96	6	6
	II.....	...	...	...	...	...	...	...	...	31	6	17	43	11	20	74	17	19	47	4	8	60	6	9	107	10	9	32	4	11	83	4	4	115	8	7
	III.....	...	...	...	...	...	...	...	...	27	12	31	55	21	28	82	33	29	39	4	9	83	11	12	122	15	11	54	4	7	96	5	5	150	9	6
	IV.....	...	...	...	...	...	...	...	...	26	11	30	44	17	28	70	28	29	36	13	27	92	27	23	128	40	24	46	17	27	88	18	15	134	35	21
	V.....	...	...	...	...	...	...	...	...	4	18	82	7	33	83	11	51	82	5	22	82	13	28	69	18	50	74	0	9	100	4	21	78	4	30	
	Total....	...	...	...	...	...	...	...	...	116	52	32	208	89	30	324	141	30	162	44	21	307	76	20	469	120	20	170	38	18	329	50	13	499	88	15

TABLE II

SHOWING, FOR TWELVE CHICAGO HIGH SCHOOLS, THE PERCENTAGE OF THE PUPILS WHO ENTERED IN SEPTEMBER, 1905, AND WERE GRADUATED IN JUNE, 1909, AND OF THEIR CLASSMATES WHO WERE ELIMINATED EACH YEAR, FALLING IN EACH GROUP OF GRADES

	FIRST YEAR						SECOND YEAR						THIRD YEAR						FOURTH YEAR					
	Boys			Girls			Boys			Girls			Boys			Girls			Boys			Girls		
	Eliminated		Total	Eliminated		Total	Eliminated		Total	Eliminated		Total	Eliminated		Total	Eliminated		Total	Eliminated		Total	Eliminated		Total
	Graduated	Eliminated		Graduated	Eliminated		Graduated	Eliminated		Graduated	Eliminated		Graduated	Eliminated		Graduated	Eliminated		Graduated	Eliminated		Graduated	Eliminated	
English																								
I.....	18	3	28	8	25	6	18	4	20	6	19	5	12	5	12	2	12	3	15	0	17	5	16	3
II.....	25	9	32	15	30	13	22	7	27	14	25	12	26	11	29	12	28	12	17	2	23	7	21	5
III.....	33	19	24	26	27	24	29	18	30	27	30	25	31	15	32	22	32	19	33	23	33	27	33	25
IV.....	23	39	15	33	18	35	31	41	21	33	25	36	30	40	25	46	27	43	34	42	27	38	30	39
V.....	1	31	1	18	1	23	1	31	1	20	1	23	1	30	2	18	2	23	1	33	0	23	0	27
Mathematics																								
I.....	35	6	30	10	32	9	27	4	22	9	24	7	25	16	21	0	23	11	32	5	23	14	29	9
II.....	24	12	25	13	25	13	24	10	20	16	22	14	19	5	16	5	18	5	19	25	20	0	20	15
III.....	18	15	22	19	20	18	20	20	22	20	21	20	24	19	22	11	23	10	19	5	22	7	20	6
IV.....	21	31	23	27	22	28	26	33	30	26	28	28	28	38	30	47	29	41	25	25	29	43	26	32
V.....	2	36	1	30	2	32	4	33	6	30	5	31	4	22	11	37	7	27	5	40	6	36	5	38

Foreign Language	I	0	14	I	1	0	18	3	4	0	23	0	5	0	33	0	2	I	40	2	2	0	34	I	2	0	21	I	0	5	15	11	
I.....	10	1	26	I	15	1	29	3	8	0	29	0	3	0	13	0	10	4	57	13	13	9	48	12	6	0	27	5	7	3	14	10	
II.....	14	9	19	15	11	4	20	9	9	0	12	2	4	0	10	0	17	10	53	20	16	3	60	17	11	1	42	10	11	2	13	8	
III.....	11	1	11	9	10	1	6	2	11	1	8	2	11	0	6	1	15	11	24	24	11	7	32	14	8	2	20	3	7	2	16	10	
IV.....	3	9	2	6	4	4	3	1	2	3	0	1	0	0	1	0	0	32	3	17	3	11	7	8	2	1	0	3	1	1	0	0	
V.....																																	
Total.....	39	20	72	32	41	10	76	18	34	4	72	7	23	0	63	1	44	58	177	76	45	30	181	52	29	4	110	22	26	13	58	39	
History																																	
I.....	..	..	..	..	5	0	13	0	6	0	14	0	10	0	22	0	..	..	..	..	..	0	18	3	0	0	12	0	1	5	11	11
II.....	..	..	..	..	5	3	23	4	11	2	21	2	11	0	18	0	..	..	..	..	..	4	14	5	6	1	11	2	7	3	20	10
III.....	6	5	19	7	8	1	11	2	7	0	10	0	15	5	14	10	9	6	15	3	10	2	25	8
IV.....	5	3	5	3	2	1	4	1	6	0	3	1	12	25	14	17	7	5	16	5	4	2	14	10
V.....	2	3	0	4	2	0	3	1	1	0	0	0	2	30	3	18	4	9	0	4	0	1	1	0
Total.....	23	14	60	18	29	4	53	6	35	0	53	1	40	64	63	53	26	21	54	14	22	13	71	39

however, is not the total enrolment, but the total number of those eliminated in the one year in question and of those graduated in June, 1909. In Table II the data for the Chicago schools are presented in a somewhat different form. This table gives separately for each year, and for boys and girls separately and for both together, the percentage of the graduates and of the persons eliminated in that year whose grades fell in a given group of a given subject. Thus, 18 per cent of the boys who entered in September, 1905, and who were graduated in June, 1909, and 3 per cent of the boys who were eliminated during the first year, were in Group I (had an average standing of 90 or over) in the first year's work in English. The divergence between these percentages for the graduates and for the students eliminated measures the degree of correlation between elimination and class-standing. Incidentally this table indicates the relative standings of boys and girls and differences of grading in different subjects.

It would afford an interesting addition to this study if the data had been so collected as to compare the pupils eliminated each successive year not only with those who remained to graduate but with the entire class who returned the next year. But the study in its present form is designed to show in the most striking manner any qualitative difference which may exist between high-school pupils who are graduated and those who are not. Furthermore it is comparable in a general way with the similar study by Dr. Dearborn, who compares the average standings of all eliminated pupils, regardless of year or sex, with the average standings of all graduates for the entire course.

Conclusions regarding the amount of elimination are aside from the main purpose of this study, and such conclusions must be made subject to the following limitations: (1) Records of pupils who were transferred to some other school, records of a comparatively small number who graduated earlier or later than June, 1909, and a few records not properly filled out for eliminated pupils, were omitted. (2) The number of pupils taking any given course is always less than the total number of pupils enrolled; the nearest approach to equality is in English, where all of the work is required. (3) Pupils are counted as elimi-

nated not always in the year when they actually left but in the year when they had the last recorded grade; this causes an apparent exaggeration of the amount of elimination during the first year. (4) The percentage of elimination in the various years has been computed not on the basis of the entire enrolment but on the basis of the combination of those who were eliminated in the given year and those who were graduated in June, 1909.

In the sixteen high schools which this study includes there is a decided tendency to eliminate pupils of low class-standing. This general conclusion applies to all of the schools, to all four years, to all four subjects, and to both boys and girls; but the varying degrees in which it applies should be noticed.

The preponderance of elimination falls in the lower groups more distinctly in the Chicago and Kansas City schools than in the smaller ones; and it does so more clearly in all of the schools here studied than in those which Dr. Dearborn investigated.

It is also noticeable that the tendency to eliminate pupils of low class-standing is more pronounced among boys than among girls. The percentage of boys eliminated from group I is nearly always less than the percentage of girls from the same group, while the two percentages are always about equal in group V.

We may say that there is a slightly closer correlation between standing in English and elimination from school than there is between standing in other subjects and elimination, in the sense that the percentage of pupils dropping out of the fifth group in English is usually higher than in other subjects. But it should be remembered in this connection that all four years of English are required. Consequently failure in any year is much harder to overcome than failure in a subject where but one or two years are required.

In regard to elimination by years, there is some suggestion that during the last two years the elimination is more equally distributed among all the groups, excepting the fifth, than it is during the first two; but I hesitate to draw this conclusion seriously, in view of the small number of cases of elimination in the later years and of a few striking exceptions which occur in the statistics at hand. Perhaps it is safer to say only that

the general tendency is the same for all years, and that the lack of a steady rise in the percentage curve from the first to the fifth group is due to the smaller numbers which the curve for the later years represents.

In order that the reader may compare as nearly as possible the results obtained in Chicago with those obtained by Dr. Dearborn in the two Wisconsin cities I present Figs. 1 and 2. The main factor to be noted in explaining the different conclusions presented in these two studies is the relative quantity of elimination. In the Wisconsin cities about 45 per cent of the pupils in English were eliminated and less than 30 per cent of the pupils in mathematics; but in Chicago the total amount of elimination from the classes in English is about 72 per cent and from the classes in mathematics 67 per cent. The additional amount of elimination from the Chicago schools is concentrated in the lower groups.

To interpret adequately the foregoing conclusions, to say what underlying causes have been operative, and whether or not the high schools concerned are performing their function efficiently, would be a difficult task. I shall not discuss these things at length, but as a fitting conclusion to this study I shall mention a few of the fundamental questions which arise.

First of all, why is so large a percentage of elimination found in the lower groups? Apparently the causes are inherent in the schools themselves. Had the causes been accidental and external to the school organization, the percentage of elimination ought to be more or less uniform in all groups, owing to the established law of trait distribution. And doubtless the elimination from the first group is a fair indication of what that percentage would be.

Another fact suggesting that the causes of such elimination are inherent in the school is the variation which exists between different schools, especially between large and small schools. Quantitatively the elimination from the small schools is less and qualitatively it tends more toward the normal distribution. For example, in the work in first-year English, the percentage of elimination was only 36 per cent in the three small high schools,

as against 51 per cent for the Kansas City school and 62 per cent for the twelve Chicago schools; and the percentages of elimination for the five groups of grades in first-year English

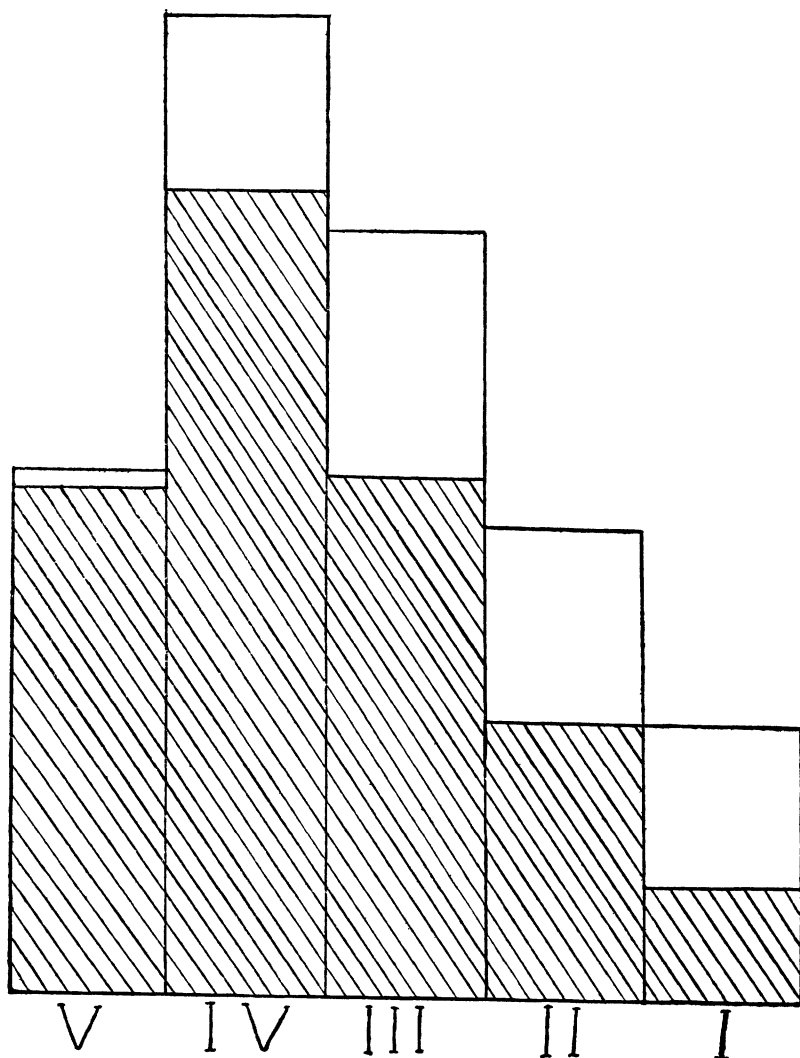


FIG. 1.—Showing in open columns the distribution according to average standings in English for four years of 742 pupils graduated from twelve Chicago high schools in June, 1909, and in shaded columns the distribution according to annual standings last recorded of 1,953 pupils eliminated from the same class.

were respectively 10, 15, 44, 41, and 65 for the three small schools, as against 16, 28, 53, 92, and 98 for the Kansas City school, and 30, 42, 59, 76, and 98 for the twelve Chicago schools. To my mind this indicates a closer personal relation which exists between teachers and pupils of the small high schools. Here it

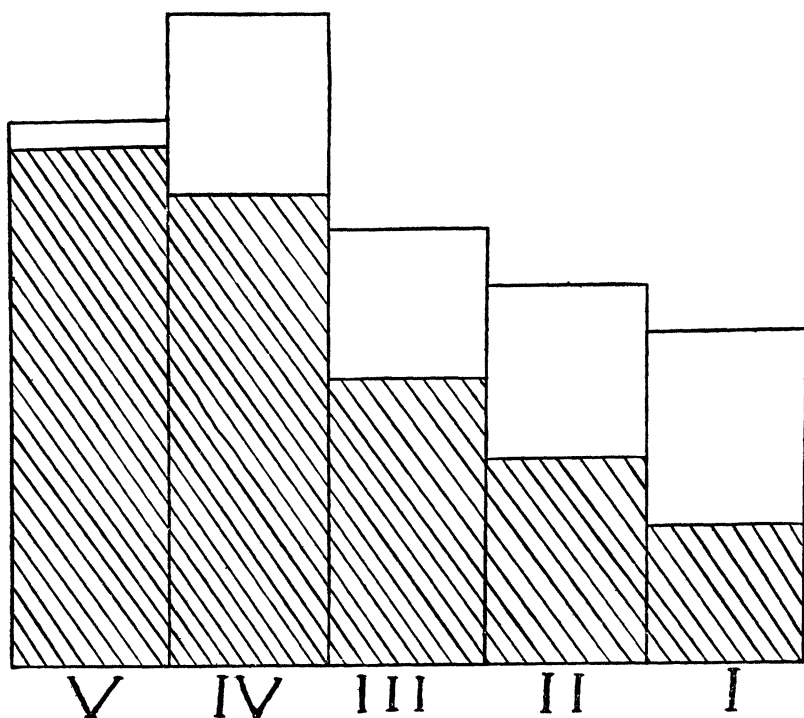


FIG. 2.—Showing in open columns the distribution according to average standings in mathematics for four years of 673 pupils graduated from twelve Chicago high schools in June, 1909, and in shaded columns the distribution according to annual standings last recorded of 1,414 pupils eliminated from the same class.

is much easier than in a large system to provide for the interests of every individual. Greater homogeneity of population exists; also the principal can become better acquainted with the home life and social environment of each pupil. The interests of the pupil and the interests of the school more frequently become harmonized and remain together, thus tending to reduce the quan-

tity of elimination to those whom causes accidental and external to the school organization take away.

Seemingly all of these schools, however, have set up certain arbitrary standards of academic attainment and have eliminated more or less consistently a large majority of those whom they judge inferior. They do this with even greater precision among boys than among girls. But it was pointed out earlier that this variation is due to the greater number of girls who drop out of the upper groups, perhaps indicating that girls leave the high school in greater numbers than boys do through other influences than the school itself. Nevertheless this judgment of inferiority passed upon pupils of either sex very definitely influences elimination. Now what does this judgment of inferiority mean? Surely it does not mean necessarily a general incapacity on the part of the pupil. At most it can mean only that the pupil is not well adapted to the specified academic program. Doubtless the pupil who leaves under the pressure of this adverse judgment makes in his own mind a reciprocal criticism of the school. He has come to realize that his interests and the established program of the school do not harmonize. He has felt the lack of co-ordination and he leaves to seek an occupation more suitable. Perhaps if the school had greater flexibility of academic requirement, if it permitted the election of manual and industrial work more freely, if it fully provided for individual differences in interest and capacity, these very pupils who now are eliminated systematically from the lower groups would actually remain until graduation and do well.

In the schools here studied the results seem to substantiate the judgment of Ayres that "our courses of study as at present constituted are fitted not to the slow child or the average child but to the unusually bright one."³ But as formerly suggested we would interpret "bright" as meaning the particular kind of brightness needed to deal with the existing school program.

Whether we see in this whole situation efficiency or inefficiency on the part of the schools will depend, of course, upon our conception of the function of the high school and of the gen-

³ Ayres, *Laggards in our Schools*, 5.

eral significance of elimination. If we look upon the high school as a great selective agency, preparing for college a few who are best adapted to a purely academic career, are not these high schools doing their duty well? An affirmative answer becomes all the more necessary in the light of recent investigations showing a high degree of correlation between standings in high school and subsequent standings in college.⁴ On the other hand, if we consider the high school as a great democratic and popular educative agency, whose business it is to lead all classes of young people to higher industrial and social levels, and if we look upon every case of elimination as a misfortune both to the individual and to society, then are not these schools exceedingly inefficient? By both the quantity and the quality of their elimination they stand accused.

Such an investigation as this, however, can only raise these larger and more fundamental questions of school organization. It cannot answer them. Evidently one important problem of school administration at present is to determine how far the high school is justified in yielding to the wants of those who are not in harmony with its program, and how far it shall operate as an eliminating agency.

⁴ See Dearborn, "The Relative Standing of Pupils in the High School and in the University," *Bulletin of the University of Wisconsin*, High School Series, No. 6.